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Izvedba jeklenih in aluminijastih konstrukcij - 2. del: Tehnične zahteve za izvedbo jeklenih konstrukcij

Execution of steel structures and aluminium structures - Part 2: Technical requirements for steel structures

Ausführung von Stahltragwerken und Aluminiumtragwerken - Teil 2: Technische Regeln für die Ausführung von Stahltragwerken

Exécution des structures en acier et des structures en aluminium - Partie 2: Exigences techniques pour les structures en acier

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Execution of steel structures and aluminium structures - Part 2: Technical requirements for steel structures

Exécution des structures en acier et des structures en
aluminium - Partie 2: Exigences techniques pour les
structures en acier

Ausführung von Stahltragwerken und Aluminiumtragwerken
- Teil 2: Technische Regeln für die Ausführung von
Stahltragwerken

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 135.

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Foreword

This document (prEN 1090-2:2015) has been prepared by Technical Committee CEN/TC 135 “Execution of steel structures and aluminium structures”, the secretariat of which is held by SN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1090-2:2008+A1:2011.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

Informative Annex B giving guidance for the determination of execution class has been removed and normative requirements for the selection of execution class are now included in Annex C of EN 1993-1-1.

A new informative Annex D has been included giving guidance on a procedure for checking the capability of thermal cutting processes.

A new informative Annex F has been included giving guidance on the selection of weld classes.

A new informative Annex K has been included giving guidance on determination of the loss of preload from thick coatings on contact surfaces in preloaded connections.

Other annexes have been renumbered accordingly:

— Annex C becomes B

— Annex D becomes C

— Annex F becomes G

— Annex G becomes H

— Annex H becomes J

— Annex K becomes L

— Annex L becomes M

— Annex M becomes N

— Annexes A and E are not renumbered.

There have been some technical corrections included in these annexes.

The main text remains substantially the same in technical intent. It includes updated cross-references to supporting standards and some corrections.

EN 1090, *Execution of steel structures and aluminium structures* will consist of the following parts:

— Part 1: Requirements for conformity assessment of structural components.

— Part 2: Technical requirements for steel structures.

- Part 3: Technical requirements for aluminium structures.
- Part 4: Technical requirements for thin-gauge, cold-formed steel elements and structures for roof, ceiling, floor and wall applications.
- Part 5: Technical requirements for thin-gauge, cold-formed aluminium elements and structures for roof, ceiling, floor and wall applications.

Hence, technical requirements covered in Parts 4 and 5 have been removed from EN 1090-2.

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SIST EN 1090-2:2018

<https://standards.iteh.ai/catalog/standards/sist/39a237fb-204e-4f71-99ba-27ce5a802396/sist-en-1090-2-2018>

Introduction

This European Standard specifies requirements for execution of steel structures, in order to ensure adequate levels of mechanical resistance and stability, serviceability and durability.

This European Standard specifies requirements for execution of steel structures in particular those that are designed according to all parts of EN 1993 and the steel parts of composite steel and concrete structures designed according to all parts of EN 1994.

This European Standard presupposes that the work is carried out with the necessary skill and adequate equipment and resources to perform the work in accordance with the execution specification and the requirements of this European Standard.

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1 Scope

This European Standard specifies requirements for execution of structural steelwork as structures or as manufactured components, produced from:

- hot rolled, structural steel products up to and including grade S690;
- cold formed components and sheeting up to and including grades S700;
- hot finished and cold formed austenitic, austenitic-ferritic and ferritic stainless steel products;
- hot finished and cold formed structural hollow sections, including standard range and custom-made rolled products and hollow sections manufactured by welding.

For cold formed components and sheeting and cold formed structural hollow sections that are within the scope of EN 1090-4, the requirements of EN 1090-4 take precedence over corresponding requirements in this European Standard.

This European Standard may also be used for structural steel grades up to and including S960, provided that conditions for execution are verified against reliability criteria and any necessary additional requirements are specified.

This European Standard specifies requirements independent of the type and shape of the steel structure (e.g. buildings, bridges, plated or latticed components) including structures subjected to fatigue or seismic actions. The requirements are expressed in terms of execution classes.

This European Standard applies to structures designed according to the relevant part of EN 1993. With respect to the execution of piling designed to EN 1993-5, this European Standard applies to the execution of anchors, walings, bracings and connections but does not supersede the execution requirements given in EN 12699 or EN 14199.

[SIST EN 1090-2:2018](#)

This European Standard applies to steel components in composite steel and concrete structures designed according to the relevant part of EN 1994. [2396/sist-en-1090-2-2018](#)

This European Standard may be used for structures designed according to other design rules provided that conditions for execution comply with them and any necessary additional requirements are specified.

This European Standard includes the requirements for the welding of reinforcing steels to structural steels. This European Standard does not include the execution of reinforcing steels for concrete applications.

2 Normative references

2.1 General

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

2.2 Constituent products

2.2.1 Steels

EN 10017, *Steel rod for drawing and/or cold rolling — Dimensions and tolerances*

EN 10021, *General technical delivery requirements for steel products*

EN 10024, *Hot rolled taper flange I sections — Tolerances on shape and dimensions*

EN 10025-1, *Hot rolled products of structural steels — Part 1: General technical delivery conditions*

EN 10025-2, *Hot rolled products of structural steels — Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10025-3, *Hot rolled products of structural steels — Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels*

EN 10025-4, *Hot rolled products of structural steels — Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels*

EN 10025-5, *Hot rolled products of structural steels — Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance*

EN 10025-6, *Hot rolled products of structural steels — Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition*

EN 10029, *Hot rolled steel plates 3 mm thick or above — Tolerances on dimensions, shape and mass*

EN 10034, *Structural steel I and H sections — Tolerances on shape and dimensions*

EN 10048, *Hot rolled narrow steel strip — Tolerances on dimensions and shape*

EN 10051, *Hot-rolled strip and plate/sheet cut from wide strip of non-alloy and alloy steels — Tolerances on dimensions and shape*

EN 10055, *Hot rolled steel equal flange tees with radiused root and toes — Dimensions and tolerances on shape and dimensions*

EN 10056-1, *Structural steel equal and unequal leg angles — Part 1: Dimensions*

EN 10056-2, *Structural steel equal and unequal leg angles — Part 2: Tolerances on shape and dimensions*

EN 10058, *Hot rolled flat steel bars for general purposes — Dimensions and tolerances on shape and dimensions*

EN 10059, *Hot rolled square steel bars for general purposes — Dimensions and tolerances on shape and dimensions*

- EN 10060, *Hot rolled round steel bars for general purposes — Dimensions and tolerances on shape and dimensions*
- EN 10061, *Hot rolled hexagon steel bars for general purposes — Dimensions and tolerances on shape and dimensions*
- EN 10080, *Steel for the reinforcement of concrete — Weldable reinforcing steel — General*
- EN 10088-1, *Stainless steels — Part 1: List of stainless steels*
- EN 10088-4 *Stainless steels — Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes*
- EN 10088-5 *Stainless steels — Part 5: Technical delivery conditions for bars, rods, wire, sections and bright products of corrosion resisting steels for construction purposes*
- EN 10131, *Cold rolled uncoated and zinc or zinc-nickel electrolytically coated low carbon and high yield strength steel flat products for cold forming — Tolerances on dimensions and shape*
- EN 10139, *Cold rolled uncoated mild steel narrow strip for cold forming — Technical delivery conditions*
- EN 10140, *Cold rolled narrow steel strip — Tolerances on dimensions and shape*
- EN 10143, *Continuously hot-dip metal coated steel sheet and strip — Tolerances on dimensions and shape*
- EN 10149-1, *Hot-rolled flat products made of high yield strength steels for cold forming — Part 1: General delivery conditions*
- EN 10149-2, *Hot-rolled flat products made of high yield strength steels for cold forming — Part 2: Technical delivery conditions for thermomechanically rolled steels*
- EN 10149-3, *Hot-rolled flat products made of high yield strength steels for cold forming — Part 3: Technical delivery conditions for normalized or normalized rolled steels*
- EN 10160, *Ultrasonic testing of steel flat product of thickness equal or greater than 6 mm (reflection method)*
- EN 10163-2, *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections — Part 2: Plate and wide flats*
- EN 10163-3, *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections — Part 3: Sections*
- EN 10164, *Steel products with improved deformation properties perpendicular to the surface of the product — Technical delivery conditions*
- EN 10169, *Continuously organic coated (coil coated) steel flat products — Technical delivery conditions*
- EN 10204, *Metallic products — Types of inspection documents*
- EN 10210-1, *Hot finished structural hollow sections of non-alloy and fine grain steels — Part 1: Technical delivery conditions*
- EN 10210-2, *Hot finished structural hollow sections of non-alloy and fine grain steels — Part 2: Tolerances, dimension and sectional properties*
- EN 10219-1, *Cold formed welded structural hollow sections of non-alloy and fine grain steels — Part 1: Technical delivery requirements*

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EN 10219-2, *Cold formed welded structural hollow sections of non-alloy and fine grain steels — Part 2: Tolerances, dimensions and sectional properties*

EN 10268, *Cold rolled steel flat products with high yield strength for cold forming — Technical delivery conditions*

EN 10279, *Hot rolled steel channels — Tolerances on shape, dimensions and mass*

EN 10296-2, *Welded circular steel tubes for mechanical and general engineering purposes — Technical delivery conditions — Part 2: Stainless steel tubes*

EN 10297-2, *Seamless circular steel tubes for mechanical and general engineering purposes — Technical delivery conditions — Part 2: Stainless steel tubes*

EN 10346, *Continuously hot-dip coated steel flat products — Technical delivery conditions*

EN ISO 1127, *Stainless steel tubes — Dimensions, tolerances and conventional masses per unit length (ISO 1127)*

EN ISO 9444-2, *Continuously hot-rolled stainless steel — Tolerances on dimensions and form — Part 2: Wide strip and sheet/plate (ISO 9444-2)*

EN ISO 9445-1, *Continuously cold-rolled stainless steel — Tolerances on dimensions and form — Part 1: Narrow strip and cut lengths (ISO 9445-1)*

EN ISO 9445-2, *Continuously cold-rolled stainless steel — Tolerances on dimensions and form — Part 2: Wide strip and plate/sheet (ISO 9445-2)*

EN ISO 18286, *Hot-rolled stainless steel plates — Tolerances on dimensions and shape (ISO 18286)*

ISO 4997, *Cold-reduced carbon steel sheet of structural quality*

2.2.2 Steel castings

EN 1559-1, *Founding — Technical conditions of delivery — Part 1: General*

EN 1559-2, *Founding — Technical conditions of delivery — Part 2: Additional requirements for steel castings*

EN 10340, *Steel castings for structural uses*

2.2.3 Welding consumables

EN 13479, *Welding consumables — General product standard for filler metals and fluxes for fusion welding of metallic materials*

EN ISO 636, *Welding consumables — Rods, wires and deposits for tungsten inert gas welding of non alloy and fine grain steels — Classification (ISO 636)*

EN ISO 2560, *Welding consumables — Covered electrodes for manual metal arc welding of non-alloy and fine grain steels — Classification (ISO 2560)*

EN ISO 3581, *Welding consumables — Covered electrodes for manual metal arc welding of stainless and heat resisting steels — Classification (ISO 3581)*

EN ISO 13918, *Welding — Studs and ceramic ferrules for arc stud welding (ISO 13918)*

EN ISO 14171, *Welding consumables — Solid wire electrodes, tubular cored electrodes and electrode/flux combinations for submerged arc welding of non alloy and fine grain steels — Classification (ISO 14171)*

EN ISO 14174, *Welding consumables — Fluxes for submerged arc welding and electroslag welding — Classification (ISO 14174)*

EN ISO 14175, *Welding consumables — Gases and gas mixtures for fusion welding and allied processes (ISO 14175)*

EN ISO 14341, *Welding consumables — Wire electrodes and weld deposits for gas shielded metal arc welding of non alloy and fine grain steels — Classification (ISO 14341)*

EN ISO 14343, *Welding consumables — Wires electrodes, strip electrodes, wires and rods for arc welding of stainless and heat resisting steels — Classification (ISO 14343)*

EN ISO 16834, *Welding consumables — Wire electrodes, wires, rods and deposits for gas-shielded arc welding of high strength steels — Classification (ISO 16834)*

EN ISO 17632, *Welding consumables — Tubular cored electrodes for gas shielded and non-gas shielded metal arc welding of non alloy and fine grain steels — Classification (ISO 17632)*

EN ISO 17633, *Welding consumables — Tubular cored electrodes and rods for gas shielded and non-gas shielded metal arc welding of stainless and heat-resisting steels — Classification (ISO 17633)*

EN ISO 18275, *Welding consumables — Covered electrodes for manual metal arc welding of high strength steels — Classification (ISO 18275)*

EN ISO 18276, *Welding consumables — Tubular cored electrodes for gas-shielded and non-gas-shielded metal arc welding of high-strength steels — Classification (ISO 18276)*

EN ISO 26304, *Welding consumables — Solid wire electrodes, tubular cored electrodes and electrode-flux combinations for submerged arc welding of high strength steels — Classification (ISO 26304)*

2.2.4 Mechanical fasteners

EN 14399-1, *High-strength structural bolting assemblies for preloading — Part 1: General requirements*

EN 14399-2, *High-strength structural bolting assemblies for preloading — Part 2: Suitability test for preloading*

EN 14399-3, *High-strength structural bolting assemblies for preloading — Part 3: System HR — Hexagon bolt and nut assemblies*

EN 14399-4:2005, *High-strength structural bolting assemblies for preloading — Part 4: System HV — Hexagon bolt and nut assemblies*

EN 14399-5, *High-strength structural bolting assemblies for preloading — Part 5: Plain washers*

EN 14399-6, *High-strength structural bolting assemblies for preloading — Part 6: Plain chamfered washers*

EN 14399-7, *High-strength structural bolting assemblies for preloading — Part 7: System HR — Countersunk head bolts and nut assemblies*

EN 14399-8, *High-strength structural bolting assemblies for preloading — Part 8: System HV — Hexagon fit bolt and nut assemblies*

EN 14399-9, *High-strength structural bolting assemblies for preloading — Part 9: System HR or HV — Direct tension indicators for bolt and nut assemblies*

EN 14399-10, *High-strength structural bolting assemblies for preloading — Part 10: System HRC — Bolt and nut assemblies with calibrated preload*